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Information Update

February 9, 1998
Update # 42

1. This is to clarify the reasons for the reapproval of EPA methods 420.1 and 420.2 for the analysis of total phenols (Information update #41) for the compliance testing of total phenols in waste water. Some laboratories were not happy that these methods were added back to the Laboratory Licensure Rules because they are of the opinion that these above methods are prone to contamination resulting in higher bias. NPDES methods are mandated by EPA and Region IX and the state does not have the authority to implement alternate test methods for NPDES compliance testing, even if they are known to yield inaccurate results.

2. We have received frantic calls from a couple of laboratories that they are encountering difficulties in the chromatographic separation of DRO and ORO ranges for the Arizona consensus method, C_6 - C_{32} Hydrocarbons in Soil - 8015AZ, dated 01/05/98, Revision - 0 (Information Update #41). Overlapping of peaks are expected between the two ranges. The diagram in the method (Section 11.1, page 11) is a hypothetical diagram for illustration purposes only. We contacted Supelco Technical Service for a recommendation. They made a reference to an article in J. of A.O.A.C, Vol. 79, No.2, 1996, pgs.508-519, "Determination of Diesel Fuel and Motor Oil in Water and Wastes by a Modified Diesel-Range Organics Total Petroleum Hydrocarbon Method". The recommended column and oven conditions in this article are follows;

   30 m x 0.32 mm ID, 0.25 um film SPB-5 (or equivalent), Injector: 300^0 C, Detector: 300^0 C, Oven: 35^0 C- hold for 3 minutes, ramp at 10^0 C/min to 310^0 C and hold until all the motor oil elutes. The author(s) found the on-column injection gave better quantitative results (especially for the motor oil). On-column injection eliminates problems with splitter discrimination which often occurs with samples consisting of a wide range of molecular weights.

   The acceptance limits for the blind PE samples will be determined based on the 2 standard deviations calculated from all the results received.

3. We have received a few inquiries from the laboratories if they need to get certification for 8021AZ (Information Update #40). 8021AZ is not a modification to the method criteria but it is a shortened target analyte list for 8021A or B. The laboratories have an option to report the shortened list to their clients if prior agreement has been made. The labs don't need to get certified for 8021AZ, but they need certification for 8021A or 8021B (when Update III is promulgated by Arizona). If not all the

compounds are being reported, the labs can report (if client is agreeable) a short 8021AZ list. The referenced method would still be 8021A or (B).

4. The following HACH methods were approved by the Director of the Arizona Department of Health Services (ADHS) on January 30, 1998. They can now be requested for certification to be used for compliance monitoring.

WASTEWATER

	PARAMETER	APPROVED METHOD
1.	Acidity, CaCO3	8010
2.	Ammonia, (as N)	8038
3.	Arsenic - Total	8013
4.	Biochemical Oxygen Demand	8043
5.	Calcium-Total	8222
6.	Chemical Oxygen Demand	8230
7.	Chloride	8224, 8225
8.	Chlorine-Total residual	8167, 8168, 10014
9.	Chromium	8023
10.	Fluoride-Total	8029
11.	Hardness-Total	8226
12.	Hydrogen Ion (pH)	8156
13.	Lead-Total	8033
14.	Nickel-Total	8037
15.	Orthophosphate (as P)	8048
16.	Oxygen, Dissolved	8157, 8229
17.	Phenols	8047
18.	Phosphorous-Total	8190
19.	Residue-Nonfilterable (TSS)	8158
20.	Specific Conductance	8160
21.	Sulfate (as SO4)	8051
22.	Sulfide (as S)	8131
23.	Sulfite (as SO3)	8071

DRINKING WATER

	PARAMETER	APPROVED METHOD
1.	Conductivity	8160
2.	Fluoride	8029
3.	pH	8156
4.	Free Chlorine	8021
5.	Total Chlorine	8167, 8168, 8370
6.	Total and Fecal Coliform	8001

5. Due to continued audit findings and inquiries, please be aware of the following requirements for the multi-component analysis:

   At a minimum, all PCB and multi-component analyses must include the following:

   A. Multi-component analytes by EPA Method 8081:

      i. Initial Calibration: For PCB's, a minimum of five calibration levels of a mixture of Aroclors 1016 and 1260 is required. Additionally, a midpoint calibration standard of all Aroclors must be included with the initial calibration. For technical chlordane and toxaphene, a midpoint calibration standard of each is required (SW846 Method 8081, Section 7.4.1.1).

      ii. Continuing Calibration Verification: For PCB's, a mid level standard of the Aroclors 1016 and 1260 mix is required, although an Aroclor which may be specific to the project can be substituted here. For technical chlordane and toxaphene, a midpoint calibration standard of each is required (SW846 Method 8081, Section 7.4.1.2).

      iii. QC Check Sample: If the method is being used for Aroclors, Chlordane or Toxaphene only, then a QC check sample containing the most representative multi-component analyte at 50 mg/L needs to be extracted at a frequency of one per 20 samples, or one per batch (SW846 Method 8081, Section 8.2.1).

   B. Multi-component analytes by EPA Method 608: Since this method does not specifically address the analysis of multi-component analytes, other than grouping them with all other target analytes, our office has set the minimum QC criteria for these analytes by this method. Our recent issue of the Information Update, June 10, 1997, #37, provides all Arizona Licensed Laboratories with the following minimum requirements:

      i. Initial Calibration: Initially, only one Aroclor is required to have a full multilevel calibration, however, all other multi-component analytes must be run at the laboratory reporting level. Additionally, if any of the multi-component analytes is detected in the sample, then a full calibration curve must be generated for quantitation of that analyte.

      ii. Continuing Calibration Verification: The Aroclor which was used for full calibration must

be run at a mid-point concentration and meet CCV requirements. Toxaphene and chlordane must be run at any level for pattern recognition purposes.

iii. QC Check and/or Matrix Spike: Any one of the multi-component analytes that can be quantitated must be spiked at any level.

C. PCB Screening by EPA Method 508: This method is used for identification and detection, but not quantitation, of PCB's. Therefore, a calibration curve that is verified daily for each Aroclor is not necessary for compliance monitoring. However, some measures must be taken in order to verify the Aroclor detection limits or pattern recognition levels (PRL's) regularly, and that Aroclors are being recovered from the samples. Our Information Update, #12, June 9, 1995, attempted to set forth the following as minimum QC that would be required in order to provide these necessary verifications:

i. Verification of the MDL, or PRL: One of the multi-component analytes is to be run at the PRL daily. Each day of analysis, a different multi-component analyte is to be run in order to verify the detection level of each of these analytes routinely ("Manual for the Certification of Laboratories Analyzing Drinking Water" March 1997, EPA-815-B-97-001, Chapter IV, Section 7.2.4).

ii. Verification of Matrix Spike Recovery: This is achieved using the matrix spike frequency specified in Method 508, which is a minimum of 10% or one per batch (EPA Method 508, Section 10.8.1).

6. Steven Pia of Las Vegas, EMSL informed us that it is alright to filter DW samples for radchem analysis (900.0 and 00-02 methods), if the samples contained sediment, before acidification. Normally the DW samples should not contain sediment especially if it is sampled from a faucet. There is a reference for filtration in the DW manual, 4th edition, Page V1-9, Table V1-2, Sample handling, Preservation, and Instrumentation, under preservative column. This recommendation was not there in the 3rd edition. Jeff Stuck of ADEQ/DW, told us that they did not have any objections to filtering the samples before acidification. ADHS Laboratory Licensure requires the final report to be footnoted if the samples were filtered before analysis.

7. Mr. Juan Mulero of Orange Coast Analytical, Phoenix, Arizona, brought to our attention that the primary and secondary quantitation ions (151 and 153) for trichlorofluoromethane were incorrect in EPA methods 8260A and B. We contacted EPA'S MICE (Methods Information Communication and Exchange) regarding this issue. They agreed that they were typographical errors and the correct quantitation ions are 101 and 103. They will correct them in future revisions. Good Job Juan!

8. We received a total of 25 responses to our Survey on NELAC (Information Update #41). We received 19 responses for "Would like to join NELAC later" and six for "Would like to join NELAC now". Arizona has postponed joining NELAC.

9. Barbara J. Erickson, Ph.D., Bureau of State Laboratory Chief has accepted a request to serve as the Arizona representative in the capacity of a voting delegate on the National Methods and Data Comparability Board (MDCB). The MDCB is an Intergovernmental Task Force on Monitoring Water Quality, formed to respond to the United States' Office of Management and Budget's (OMB) mandate to review and evaluate national water quality monitoring activities and develop recommendations for improvement. The MDCB was charged to develop a voluntary integrated, nationwide monitoring

strategy and establish the framework and the forum for comparing, evaluating and promoting monitoring approaches.

The MDCB consists of 15 voting delegates, up to 15 alternates, and an undetermined number of non-voting technical workgroup members representing all of the geographic areas of the United States. The MDCB will have equal representation among Federal, State, and Tribal governmental agencies as well as others interested in monitoring issues. This Board enjoys the full support of the United States Environmental Protection and the United States Geological Survey agencies.

To assist Dr. Erickson in representing the issues of environmental laboratories accurately, it would be highly beneficial if you respond to the following survey.

10. If you have any questions regarding the Updates, or if you have any technical questions that need clarification, please call or send e-mail to Prabha Acharya, Program Manager, Technical Resources and Training at the Laboratory Licensure. A table of contents to all the Information Updates published is also available.